

The sheath of the notochord becomes uniformly coloured red by the carmine, without showing any nucleus either in its interior or at its outer surface; the eosine leaves it absolutely colourless. All the inner surface bristles with a multitude of little conical projections, which are continuous at their base with the hyaline substance of which the envelope is formed. These little cones remain colourless with carmine, and acquire a bright rose-colour with eosine; they do not present the appearance of nuclei, and are entirely homogeneous. At the extremity of each of them is inserted, at the same time capping it, one of the fibres of the notochord. Each fibre answers by each of its extremities to one of the projections just described; it is regularly cylindrical, contains no nucleus, and becomes coloured, like elastic tissue, yellow by the action of the picrocarminate, and bright rose by eosine.

The action of potash does not cause the breaking-up of these fibres into nucleated masses; carmine, hæmatoxyline, and the other reagents for nuclei do not reveal any in the thickness of the sheath. We are therefore justified in regarding them as non-cellular bodies, having no relation either with the characteristic tissue of the notochord or with cartilage. On the other hand they present a structure and histochemical reactions exactly analogous to those offered by the fibres which compose the axial organ of the Calamary known as the *pen*.

From what precedes, it appears that the *Amphioxus*, which is destitute of red blood containing hæmoglobine enclosed in special elements, also does not possess a dorsal chord comparable by its structure to that of all vertebrate animals. It therefore seems permissible to raise doubts as to the morphological value of its notochordal axis.—*Comptes Rendus*, April 8, 1878, p. 898.

*On the Zoological Affinities of the Genus Mesites.*

By M. A. MILNE-EDWARDS.

In 1838, I. Geoffroy Saint-Hilaire described a very remarkable bird from Madagascar under the name of *Mesites variegatus*. From its external characters he had great difficulty in referring it to any definite place in the system; and he remarked that it resembled the *Heliornithes* in its head, the Penelopes and Curassows in its body, and especially its wings, and the Pigeons in its feet. Some years later M. Desmurs described a somewhat different bird under the name of *Mesites unicolor* as a new species. G. R. Gray, in his 'Genera of Birds,' arranged *Mesites* in the family Mogapodiidæ, close to *Leipoa*; and in this he was followed by Bonaparte, Reichenbach, and Hartlaub; but in the British-Museum Catalogue of Birds, Gray shifted the genus to the Passeres, as forming a section of the family Eupetidæ. Sundevall accepted this view; and Hartlaub, in his last work on the birds of Madagascar, placed *Mesites* after the Motacillidæ, among the Dentirostres.

All this time the only known specimens were the two originally described respectively by Geoffroy Saint-Hilaire and Desmurs; but M. A. Grandidier has recently received from Tamatava two

*Mesite*, preserved in spirits, which he has sent to M. Milne-Edwards for examination. The results of this investigation are given by the author as follows:—

“The *Mesite*,” he says, “are neither Gallinaceæ nor Pigeons, as I. Geoffroy and Prince Charles Bonaparte thought; nor are they Passeres, as Gray, Sundevall, and Hartlaub supposed. They must occupy a place among the Grallæ, in which they form a family allied to the Rails and Herons. I cannot now dwell upon the conformation of the different parts of the skeleton and muscular system; these details will be set forth in a special memoir; and I shall confine myself here to noting that the sterno-clavicular apparatus is remarkable, and indicates only a very feeble power of flight; its characters are quite peculiar, although reminding one a little of those of certain Rails. The keel is not very prominent, and its anterior angle is carried back nearly to the middle of the sternum; the lateral plates are much reduced and cut into on each side by a deep emargination of the posterior margin. The episternal apophysis, which is very strong, very long, and carinate below, bifurcates at its apex to furnish points of attachment for the ligaments of the shoulder. *There is no trace of a furcular bone*; there is not even an osseous style like that which exists in certain nocturnal Rapacious birds, in some Parrots, and several Pigeons. The wings, which are very short, cannot enable the *Mesite* to sustain themselves long in the air.

“The pelvis is as remarkably broad as the sternum is narrow; we remark in it some of the characters proper to the *Eurypyge* and Rallidæ. The feet are strong, and the toes, like those of the Blongios (*Ardea minuta*) and some other Herons, are constructed so as to be able to grasp reeds and vertical stems.

“The museles greatly resemble those of the Rallidæ. As in the latter, we find a femoro-caudal and its accessory, a semitendinosus and its accessory, and an iliac accessory of the perforate flexor of the toes, which, starting from the ilio-pectineal apophysis, passes along the inside of the thigh and over the rotula, and is inserted upon the superficial flexor of the toes; this latter bundle is deficient in the Ardeidæ and in the Passeres. There are two carotids, as in the Rails and Herons, whilst the Passeres only possess a left carotid.

“The *Mesite* are also remarkable for the existence of five pairs of down-patches hidden beneath the feathers, and occupying on the dorsal surface of the body the scapular and iliac regions, and on the ventral surface the pectoral, costal, and abdominal regions. The Herons present patches of the same nature, but differently disposed. The attention of naturalists had already been called to these peculiarities by Mr. E. Bartlett.

“Lastly, I may add that the differences of form and coloration which appeared to M. Desmurs sufficient to distinguish *Mesites unicolor* from *M. variegatus* appear to me to be due to sex: in fact the female *Mesites* that we possess is exactly like *M. unicolor*, and the male has all the characters of that described by I. Geoffroy under the name of *variegatus*.”—*Comptes Rendus*, April 22, 1878, p. 1029.